

Appl. No. 09/517426
Amdt. dated February 4, 2004
Reply to Office Action of September 9, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-27 (canceled)

Claim 28 (currently amended): A process for producing crystalline energetic materials, comprising:

preparing a crystallizing mixture comprising a solvent and a crystallizable energetic material selected from the group consisting hydrazinium nitroformate, CL-20, ADN, AP, RDX, HMX and PETN;

subjecting the crystallizing mixture to ultrasonic vibration having a frequency of between 10 and 100 kHz and using an ultrasonic probe having an amplitude of between 0.4 and 30 μm ; and

harvesting a crystalline energetic material after crystallization,

wherein said crystalline energetic material has improved stability and decreased sensitivity compared to crystalline energetic material crystallized in the absence of said ultrasonic vibration.

Claim 29 (previously presented): The process of claim 28, wherein said process is carried out at a temperature between 0°C and 100°C.

Claim 30 (previously presented): The process of claim 29, wherein said process is carried out at a temperature between 15°C and 75°C.

Claim 31 (currently amended): A process for producing crystalline hydrazinium nitroformate, comprising:

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(a) preparing a crystallizing mixture comprising a solvent and hydrazinium nitroformate;

(b) subjecting the crystallizing mixture to ultrasonic vibration having a frequency of between 10 and 100 kHz and using an ultrasonic probe having an amplitude of between 0.4 and 30 μ m; and

(c) harvesting crystalline hydrazinium nitroformate after crystallization, wherein said crystalline hydrazinium nitroformate has improved stability and decreased sensitivity compared to crystalline hydrazinium nitroformate crystallized in the absence of said ultrasonic vibration.

Claim 32 (previously presented): The process of claim 31, wherein said process is carried out at a temperature between 0°C and 100°C.

Claim 33 (previously presented): The process of claim 32, wherein said process is carried out at a temperature between 15°C and 75°C.

Claim 34 (new): The process of claim 28, wherein said crystallizable energetic material is selected from the group consisting of CL-20, ADN, RDX, HMX and PETN.

Claim 35 (new): The process of claim 28, wherein said crystallizable energetic material is CL-20.

Claim 36 (new): The process of claim 28, wherein said crystallizable energetic material is ADN.

Claim 37 (new): The process of claim 28, wherein said crystallizable energetic material is selected from the group consisting of RDX and HMX.

Claim 38 (new): The process of claim 31, wherein said process further comprises

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(a1) preparing hydrazinium nitroformate in a reaction medium and obtaining crystals of said hydrazinium nitroformate therefrom in the absence of ultrasonic vibration; and

wherein in (a) said crystals of hydrazinium nitroformate from (a1) are used in preparing said crystallizing mixture comprised of solvent and hydrazinium nitroformate.